

**PL-646 CWPPRA
PROJECT COMPLETION REPORT**

PROJECT NAME	Non-Rock Alternatives to Shoreline Protection Demonstration Project
CWPPRA/STATE PROJECT NO	LA-16 (Living Shoreline Solutions, Inc.)

Report Date July 27, 2015

By: Natural Resources Conservation Service

1. Project Personnel

CPRA Project Manager	Garvin Pitman	(225) 932-5898
CPRA Construction Project Mgr	Jody White	(337) 482-0664
CPRA Monitoring Manager	Thomas McGinnis	(337) 482-0665
Federal Agency Project Manager	Loland Broussard	(337) 291-3069
Federal Agency Contracting Officer	Vicki Supler	(318) 473-7645
Federal Agency Design Engineer	Dain Gillen	(225) 665-4253
Federal Agency COR	Loland Broussard	(337) 291-3069
Federal Agency Inspector	Carol Clement	(337) 783-1257
Federal Agency Inspector	Cody LaFleur	(337) 783-1257
Federal Agency Inspector	Mike Ryder	(337) 783-1257
Federal Agency Inspector	Nathan Richard	(337) 893-5781

2. Project Location & Description

The project is located along the eastern shoreline of Vermilion Bay, on Shark Island, in Iberia Parish, Louisiana.

The project consisted of constructing a continuous linear feature of a three-sided pyramid shaped concrete structure with angled sides and triangular-shaped openings on each side and enclosed bottom. Two rows of this product were installed adjacent to each other and oriented parallel to the shoreline. The installed product is referred to as Wave Attenuation Devices (WAD[®]s).

WAD[®]s was developed by Living Shoreline Solutions, Inc. (LLS). The authors reserve and retain any and all intellectual property and licensing rights associated with the design and pending patent, Copyright 2013, all rights reserved.

3. Contract Phases

The LA-16 Non-Rock Demonstration Project was approved for funding on Priority Project List 18 by the CWPPRA Task Force. The NRCS/CPRA project team decided to pursue the project in four (4) phases as described below:

Phase 1 – Request for Proposals: NRCS posted a Request for Proposals (RFP) on the Federal Business Opportunities website with a deadline date for submittals due March 15, 2012. Of the 17 proposals received, 14 qualified for further evaluation. The project team selected 5 proposals to advance to the next phase.

Phase 2 – Engineering and Design: Funding was provided via contracts to the 5 offerors to develop a comprehensive design report and complete set of construction plans and specifications. Each proposal was further evaluated and prioritized based on the information provided.

Phase 3 – Construction: Predicated on funding available, the top 4 offerors received contracts to fabricate and install 500 linear feet of their product at the Shark Island site in Iberia Parish, Louisiana. Of the 4 contractors, 3 successfully executed their contracts.

Phase 4 – Monitoring: A 3-year monitoring period has been established for each product to determine their effectiveness in providing shoreline protection and durability to last a 20-year life. The monitoring period began May 5, 2014 and will end on May 5, 2017.

4. Final Constructed Features

The final constructed feature consisted of 513 linear feet of WAD®s on the bayside (east) of the structure and 500 linear feet on the shore side (west). Each unit was installed on the bay bottom in approximately 3-4’ of water and within 60 to 130 feet from the existing shoreline.

5. Task Force Funding Approval

	Project Cost Estimates
Construction	\$ 1,159,869.00
E & D	\$ 504,307.00
Landrights	\$ 10,373.00
Monitoring	\$ 10,787.00
O&M	\$ 220,901.00
Total	\$ 1,906,237.00

*Note: The above cost estimates reflect the total initial funds for the LA-16 Project and not individual contracts.

6. Items of Work

Item No.	Work	Estimated Quantity	Unit	Original Award		Final Amount		% Over/Under
				Unit Bid Price	Bid Amount	Final Quantity	Final Amount	
1	Mobilization and Demobilization to Shark Island Site	1	Job	\$68,724.00	\$68,724.00	1	\$68,724.00	100.00%
2	Installation of Shoreline Protection System at Shark Island Site	500	LF	\$1,301.45	\$650,726.00	500	\$650,726.00	100.00%
3	Removal of Shoreline Protection System at Shark Island (Option)	1	Job	\$115,816.00	\$115,816.00			
Total				\$835,266.00		\$719,450.00		

***NOTE:** The contract will remain open for 3 years after the installation of the last product. Contract funds will remain obligated until May 5, 2017 for CLIN 3.

***NOTE:** No Government Estimate was established. Costs were established based on the design estimate produced during Phase II.

7. Construction and Construction Oversight

Prime construction contractor	Living Shoreline Solutions, Inc.
Subcontractor	CDM Federal Programs Corp.
Subcontractor	LeBlanc Marine, LLC
Subcontractor	Kennco Manufacturing
Original construction contract	\$ 835,266.00
Change orders	\$ 0.00
Over/Under runs	\$ 0.00
Final construction contract	\$ 719,450.00 *

***NOTE:** The contract will remain open for 3 years after the installation of the last product. Contract funds will remain obligated until May 5, 2017 for CLIN 3.

8. Major Equipment Used

- Spud Equipment Barge “JBR 901”
- Supply Barge
- Cat 345C Excavator
- Aluminum Deck Boat “Miss Riley”
- 25’ Carolina Skiff
- Tug Boat “Little Bob”
- Tug Boat “Full Steam”
- Aluminum Cabin Boat “Mr Brooks”

9. Construction Sequence

Living Shoreline Solutions, Inc. subcontracted the services of various entities for the fabrication (Kennco Manufacturing & CDM), construction (LeBlanc Marine), lab testing (Site Engineering), transportation (LeBlanc Marine), and installation (LeBlanc Marine) of the WAD[®]s. They also provided their own labor force to assist with construction and installation related activities. The staging area for the construction and storing of the WAD[®]s was at the LeBlanc Marine facility, located in the Port of Iberia, Iberia Parish.

LeBlanc Marine began mobilizing equipment and supply barges to the job site on April 23, 2014. Installation of the WAD[®]s began the same day with the first unit located on the southern end of the job site with succeeding units progressing northward. All work at the job site was conducted via marine equipment due to the fact land access was prohibited. In order to deliver all WAD units to the job site, several trips back to the port by a tug boat and supply barge were required. LSS realized a larger supply barge could have reduced this task and resulting down-time. They had underestimated the number of units that could be installed per day.

Each unit was placed on the bay bottom in a straight linear alignment from south to north. The bases of the units were installed adjacent to each other with alternating bayside/shore-side placement. With no anchoring required, LSS was installing, on average, one unit every 4-6 minutes. 78 WAD[®]s were installed on the bayside (west) of the structure and 77 on the shore side (east) giving a total of 155 units.

10. Contract Modifications & Field Changes

Modification #1 – The purpose of this modification was to change the payment method for CLIN 2 – Installation of Shoreline Protection System at Shark Island Site to allow for partial payments after the approval of certain milestones. Construction Specification 453 – Shoreline Protection System was revised. There was no change to the contract amount or performance time.

Modification #2 – The purpose of this modification was to provide for the COR Approver for this contract due to the implementation of IPP. There was no change to the contract amount or performance time.

Modification #3 – The purpose of this modification was to provide for the new alignment of the project features as proposed by LSS. Drawing sheet C-2 was replaced. No specifications were changed. There was no change to the contract amount or performance time.

11. Pipeline and Utility Crossings

<u>Utility Type</u>	<u>Owner</u>	<u>Rep. To Contact</u>
N/A	N/A	N/A

12. Construction Safety

No safety issues occurred.

13. Additional Comments

See attached NRCS Supplement

14. Significant Construction Dates:

	Date	Bid I.D.
Site Showing <u>1/</u>	November 16, 2011	
Bid Opening <u>2/</u>	March 15, 2012	AG-7217-S-12-0003
Construction Contract Award	9/9/2013	AG-7217-C-13-0012
Preconstruction Conference	9/26/2013	
Notice to Proceed	11/11/2013	
Mobilization	04/23/2014	
Construction Start	04/23/2014	
Construction Completion	05/05/2014	

Final Inspection	5/1/2014	
Release of Claims	<u>3/</u>	
Close-out Meeting	06/25/2014	

1/ Refer to Item #3 in this report. A site showing was held for all potential offerors submitting proposals for Phase 1.

2/ Refer to Item #3 in this report. An RFP was posted on FedBizOps for Phase 1 with proposals due on the date shown.

3/ This item will be completed after the contract is closed (after 3 yr monitoring).

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NRCS SUPPLEMENT TO COMPLETION REPORT**

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CONSTRUCTION SPECIFICATIONS

List any significant items in the construction specifications which caused problems, need clarification or changes for future contracts of this nature.

DESCRIPTION OF ITEM IN SPECIFICATIONS	RECOMMENDATIONS FOR FUTURE CONTRACTS
<ul style="list-style-type: none"> This item was completed by the contractor 	

CONSTRUCTION PLANS

List any significant items in the construction plans which caused problems, need clarification or changes for future contracts of this nature.

DESCRIPTION OF ITEM ON THE PLANS	RECOMMENDATIONS FOR FUTURE CONTRACTS
<ul style="list-style-type: none"> This item was completed by the contractor 	

GENERAL COMMENTS

List any significant items which worked well and should be repeated or which caused problems, need clarification or changes for future contracts of this nature.

DESCRIPTION OF ITEM	RECOMMENDATIONS FOR FUTURE CONTRACTS
Banding	The 2” bands holding the top and bottom sections together was overkill. It was hard to work with. In the future they plan to use 1” stainless steel straps. The contractor has tested the structure with ¾” bands in the yard and they worked great.
Bond Sections	The contractor would not use True Bond between the top and bottom sections again because it was messy and really did not do what they expected. In the future they plan to use mastic.

<p>Production Rates</p>	<p>The contractor originally thought that they could pour concrete in the molds two times per day, they budgeted for 1 ½ times per day. Realistically they could only pour once per day.</p>
<p>Production Rates</p>	<p>During this installation they brought 21 units on the first day and 26 units on the next trip. The next installation they will bring everything on 3 fully loaded barges. If they would have done this on this installation, they could have been done in 6 hours instead of several days.</p>
<p>Cost Per Linear Foot</p>	<p>This installation costs \$1,440 per linear foot. For an installation of 4,000 linear feet with 10 forms the cost will come down to less than \$1,000 per linear foot.</p>
<p>Rebar Placement</p>	<p>The procedure was easy on this installation. In the future they plan to use a larger size bar.</p>
<p>Concrete Mix</p>	<p>The contractor was pleased with the mix design of this project and does not intend to change it.</p>
<p>Base Unit</p>	<p>In the future the contractor will probably put a hole in the bottom of the base and drive a pile through the middle. At least on both ends of the project site.</p>